DOCUMENT RESUME

ED 334 203 TM 016 599

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TITLE Peer Review: It Works.
PUB DATE Apr 91
NOTE 11p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, April 3-7, 1991).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *College Students; *Feedback; Higher Education; *Instructional Effectiveness; *Peer Evaluation; Scoring; Student Evaluation; *Writing Evaluation
IDENTIFIERS Writing Samples

ABSTRACT

Seventy-four college students participated in a peer review assignment. Subjects were asked to write a draft of a three-page paper, distribute copies to three peer reviewers, revise their papers using the resulting feedback from each of the three peer reviewers, and then prepare and submit a final paper. Reviews were scored for the quality and specificity of feedback. Final papers were scored for the degree to which appropriate feedback was accepted. Results suggest that peer comments improved writing and that students of all ability levels can select and apply appropriate feedback. Papers receiving higher grades were more likely to have accepted appropriate feedback. Feedback that was judged to be of higher quality was more likely to be accepted. While students who wrote better papers and made higher course grades gave better feedback, the willingness to accept appropriate feedback was unrelated to course grade. (Author/SLD)

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Peer Review: It Works

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American Educational Research Association meetings, April 1991.

Running head: PEER REVIEW: IT WORKS

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Abstract

Seventy four college students participated in a peer review assignment. Reviews were scored for the quality and specificity of feedback. Final papers were scored for the degree to which appropriate feedback was accepted. The results suggest that peer comments improve writing and that students of all ability levels can select and apply appropriate feedback. Papers receiving higher grades were more likely to have accepted appropriate feedback (r=.389). Feedback judged to be higher quality was more likely to be accepted (r=.380). While students who wrote better papers and made higher course grades gave better feedback (r=.213 and r=.465), willingness to accept appropriate feedback was unrelated to course grade (r=.118, n.s.).

Peer Review: It Works

Peer review of written work has been suggested as a useful cooperative learning technique in the college classroom (e.g., Beaven, 1977; Bruffee, 1978; Damon, 1984; DiPardo & Freedman,1988; Gere, 1987; Graves, 1983; Nystrand, 1986; Nystrand & Brandt, 1989;Sharan & Shachar, 1988; Slavin, 1983; Williams and Colomb, 1990.) Slavin (1983) and others have argued that cooperative learning enhances learning and motivation. Vygotsky (1981) and Piaget (1959) argue that higher level cognitive functions develop through 'collective' argument and interaction. Allowing students to critique each others' writing also helps develop the notion of 'audience,' which should sensitize writers to the reader's perspective.

Despite this theoretical support for peer review, there has been considerable disagreement about the quality and varieties of feedback actually provided by students versus teachers. The utility of peer reviews obviously depends on the quality of the feedback and the ability of authors to select and apply appropriate versus inappropriate feedback. The scant empirical research on the effectiveness of peer review has found both positive (e.g., Nystrand, 1986: Nystrand, 1989; Kottke, 1988) and negative results (Newkirk, 1984). One major concern has been that students will not be able to give effective feedback and/or that student authors will not be able to discriminate between appropriate and inappropriate feedback. This study addresses this issue.

Method

Seventy-four students in a beginning educational psychology class were asked to write a draft of a paper (approximately 3 pages), distribute copies to three peer reviewers, then revise their papers using the resulting feedback, and turn in a final paper. Each author also served as a reviewer for three drafts.

Reviewers and authors were encouraged to discuss drafts as well as provide written comments. Reviewers could not review drafts of friends. Reviewers had about 10 days to do their reviews, and authors had another 10 days to complete their final papers. The writers' assignment was to analyze a controversial situation, using concepts from the text and lectures.

In particular, students read a newspaper article on controversial new schools designed exclusively for black, inner city boys. They were asked to formulate a position regarding the appropriateness of such schools and support their opinion based on information and perspectives from the course. Instructions included a list of questions authors might want to consider (e.g., Which of the theorists that you've read would think this is a good idea? Which would think this is a bad idea? In what ways do middle class and inner city environments typically differ that have educational impact? Are middle class and inner city children often rewarded (and/or punished) for different behaviors? Are boys and girls rewarded (and/or punished) for different behaviors? Are African American rewarded (and/or punished) for different behaviors compared to other ethnic groups? What are the implications? How are motivational patterns likely to differ for middle class versus these young men? How does racial prejudice impact on the educational process?) Included, too, was a list of concepts which might apply (e.g., achievement motivation, accommodation, assimilation, cognitive development, identity crisis, self-concept, values clarification, attribution, autonomy, authoritative teachers, early experiences, schemas, social learning, behavior modification, conformity, gender identity, selective attention, parenting style, role models, single parent, frustration-aggression theory).

Students were given specific instructions on how to review, focusing on content, structure, clarity and logic rather than spelling or grammar. The training for reviewers consisted of an in-class lecture plus a two-page hand-out with specific questions. Examples include "What is the main point? Is it clearly identified? Is it identified early in the paper? Is it explicit? Is it what you expected after having read the first paragraph? What are the two features that most need improvement?" Reviewers did not assign grades to papers, but wrote comments and if both parties wanted, discussed papers with authors.

Authors were instructed to consider reviewers' comments carefully, but to accept only those that they thought would improve their paper. They were assured that the instructor and not the student reviewers would decide the paper's grade. Students were also graded on four exams, quality of the reviews they did of others' papers, and several other assignments.

Reviews were scored independently by two researchers on a 4 point scale for quality of feedback and specificity. High quality feedback was appropriate, accurate, and helpful; low quality feedback was incorrect or irrelevant. Specific feedback applied to a specific phrase or sentence while general feedback referred to the overall paper. Final drafts of all papers were first graded (by both researchers) without writing the grade on the paper. The grade was based on the extent to which students used concepts from the class as well as quality of writing. Then papers were scored on a global three point scale for the degree to which the final version had incorporated appropriate suggestions from each review. In this case, a 3 indicated acceptance of appropriate feedback only, a 2 indicated mixed acceptance, and a 1 indicated no acceptance or acceptance of inappropriate feedback only. Four scores were thus available for each student's paper: grade, acceptance of review #1,

acceptance of review #2, and acceptance of review #3. Each student also had a score of the quality of their reviews of others' papers (a maximum of 12 points), tests (based on 100 points), and course grade (based on 100 points).

Results

The two raters showed an high level of agreement on each measure: Interrater reliabilities for paper grades, r=.83; for quality of feedback, r=.90, for specificity, r = .92, and for acceptance, r= .88.

The results indicate that peer review is effective:

1. Better papers resulted from acceptance of appropriate feedback (paper grade by acceptance, r=.389, p<.01).
2. Students could discriminate quality feedback from irrelevant feedback: hiigh quality feedback was more likely to be accepted (r=.380, p<.01).
3. As the specificity of the feedback increased, acceptance increased, (r=-.457, p<.01)
4. Students' course grade was unrelated to their ability to discriminate useful from non-useful feedback, (course grade by appropriate acceptance of feedback, r = .118, n.s.).
5. Although conceptually quality of feedback and specificity were independent (i.e., high quality feedback could have been general and low quality feedback could have been specific), quality and specificity of the actual feedback were highly correlated (r=-.655, p<.01); that is student reviewers gave much better feedback when they gave specific rather than general feedback.

As might be expected, quality of the reviews was a function of the students' overall performance in the course (author's course grade by author's reviews, r=. .465, p< 01). As might also be expected, those students who wrote

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better papers were also better reviewers (paper grades by grades on reviews, r=. 213, p<.05). The grades on papers and exams were highly correlated (r=. 559, p<.01), suggesting that both types of tasks measured similar knowledge and skills.

Discussion

While quality of the reviews varied and was related to student ability, students of all ability levels were able to select and use appropriate feedback. While acceptance of feedback was not related to ability, there were some students who ignored feedback. It was not possible in this study to determine why some students steadfastly refused to accept even very specific, high quality feedback. For example, several students referred to the 'state' of Milwaukee and in each case, several reviewers pointed out that Milwaukee was a city rather than a state. These authors rewrote their papers without making the suggested change. Informal discussion with 'resistors' suggested the problem often went beyond a writing problem. Some resistors expressed open hostility towards their reviewers and the idea that other students had been allowed to read their papers. Peer review can obviously be problematic with very defensive and hostile students. Group composition may need to be carefully monitored to avoid defensiveness. Also, the result showing that quality of the review was related to student ability points to the importance of using student ability as a factor in assigning reviewers. Peer review could fail if a student happened to be assigned all low performing reviewers and hence did not receive any high quality feedback.

Nystrand (1989) suggests discussion of drafts is one key to improvement of drafts, and it may be that discussion also contributes to the acceptance or rejection of feedback. In the present study students were not required to hold

formal discussions with their reviewers, but many students reported doing so. I suspect from my discussion with students that those who talked with their reviewers were more likely to accept feedback. Clearly research is needed to discover more about the conditions under which various students will accept or reject appropriate feedback.

The most important finding is that acceptance of feedback improved writing. This result suggests that even in a large class without a great deal of training, college students' writing can be improved through peer review. The results from this study add important information to our understanding of peer review as a form of cooperative learning in the college classroom: Peers can give useful feedback and student authors can benefit from their peers' comments.

References

Beaven, M. (1977). Individualized goal setting, self-evaluation, and peer evaluation. In C. Copper & L. Odell (Eds.), Evaluating writing: Describing, measuring, judging (135-156). Urbana, IL: National Council of Teachers of English.

Bruffee, K. (1978). The Brooklyn plan: Attaining intellectual growth through peer-group tutoring. Liberal Education, 64, 447-468.

DiPardo, A. & Freedman, S. (1988). Peer response groups in the writing classroom: Theoretic foundations and new directions. Review of Educational Research, 58, 119-149.

Gere, A. (1987). Writing groups: History, theory and implications. Carbondale: Southern Illinois University Press.

Graves, (1983). Writing: Teachers and children at work. Exeter, New Hampshire: Heinemann.

Kottke, J. (1988). Students as peer critics of writing in a psychology course. Psychological Reports, 62, 337-338.

Newkirk, T. (1984). Direction and misdirection in peer response. College composition and communication, 35, 301-311.

Nystrand, M. (1986). Learning to write by talking about writing: A summary of research on intensive peer review in expository writing instruction at the University of Wisconsin-Madison. In N. Nystrand (Ed.), The structure of written communication. Orlando, Fl; Academic press.

Nystrand, M., & Brandt, D. (1989). Response to writing as a context for learning to write. C. Anson (Ed.) Writing and response: Theory, practice, and research. Urbana: National Council of Teachers of English.

Piaget, J. (1959). The language and thought of the child. (3rd ed., M. Gabain, Trans.) London: Routledge and Kegan Paul

Sharan, S.,& Shachar, C. (1988). Language and learning in the cooperative classroom. New York: Springer.

Slavin, R.E. (1983). Cooperative learning. New York: Longman.

Vygotsky, L. (1986). Thought and language (Alex Kozulin, Trans.) Cambridge, MA: MIT press.

Williams, J. & Colomb, G. (1990). Articulating writing programs from the top down: Some hierarchical principles for organizing programs. In T. Fulwiler and A. Young (eds.) Writing Across the curriculum.